

AMENDMENTS TO THE CLAIMS:**BEST AVAILABLE COPY**

1. **(Currently Amended):** An explicit routing method in a label switching system, comprising:

a step of logically defining a label switching router (LSR) connected to an MPLS (Multi Protocol Label Switching) network and a non-MPLS network as a plurality of LSRs each having a label switching function and each having a port or a port group; and

a step of specifying only, when setting a label switched path (LSP) on the basis of an explicit route specified, a port or a port group of an egress node that corresponds to the LSR ~~terminating the LSP within one of the plurality of logically defined LSRs terminating the LSP;~~

wherein the LSR's are actually logically defined in a plurality of adapters.

2. **(Withdrawn):** An explicit routing method in a label switching system, comprising:

a step of flooding, as topology data, a set of an intra-system port and an IP address allocated to the port, or a set of a port group among a plurality of groups into which the ports are divided, and an IP address allocated to the port group; and

a step of managing the topology data flooded from other system and, when setting a label switched path on the basis of an explicit route specified, explicitly specifying a port or a port group of an egress node, and a port or a port group of a relay node on the basis of the received topology data.

3. **(Withdrawn):** An explicit routing method in a label switching system, comprising:

a step of flooding, as topology data, a set of an intra-system port and an IP address allocated to the port, or a set of a port group among a plurality of groups into which the ports are

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divided, and an IP address allocated to the port group.

4. **(Withdrawn)**: An explicit routing method in a label switching system, comprising:

a step of flooding, as topology data, a set of an intra-system port and an IP address allocated to the port, or a set of a port group among a plurality of groups into which the ports are divided, and an IP address allocated to the port group by use of Opaque LSA of OSPF protocol.

5. **(Cancelled)**

6. **(Previously Presented)**: An explicit routing method in a label switching system, including explicitly specifying, when setting a label switched path (LSP) on the basis of an explicit route specified, a port or a port group of an egress node, and a port or a port group of a relay node, the explicit routing method comprising:

a step of specifying a port or a port group of the egress node by setting an IP address corresponding to the port or the port group of the egress node in a final ER-HOP-TLV field in ER-TLVs in Label Request Message of CR-LDP (Constraint-Based LSP setup using LDP (Label Distribution Protocol)); and

a step of specifying a port or a port group of the relay node by setting an IP address corresponding to the port or the port group of the relay node in an intermediate ER-HOP-TLV field in ER-TLVs in Label Request Message of the CR-LDP.

7. **(Previously Presented)**: An explicit routing method in a label switching system, including explicitly specifying, when setting a label switched path (LSP) on the basis of an

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explicit route specified, a port or a port group of an egress node, and a port or a port group of a relay node, the explicit routing method comprising:

a step of specifying the port or the port group of the egress node and the port or the port group of the relay node by adding an intra-system port number or an intra-system port group number in an ER-HOP-TLV field in ER-TLVs in Label Request Message of CR-LDP (Constraint-Based LSP setup using LDP (Label Distribution Protocol)).

**8. (Previously Presented):** An explicit routing method in a label switching system, including explicitly specifying, when setting a label switched path (LSP) on the basis of an explicit route specified, a port or a port group of an egress node, and a port or a port group of a relay node, the explicit routing method comprising:

a step of explicating a port through which data should pass per system and specifying a port or a port group of the egress node by use of a resource class TLV field with ER-TLV in Label Request Message of CR-LDP (Constraint-Based LSP setup using LDP (Label Distribution Protocol)) being used as ER-HOP-TLV.

**9. (Previously Presented):** An explicit routing method in a label switching system, including explicitly specifying, when setting a label switched path (LSP) on the basis of an explicit route specified, a port or a port group of an egress node, and a port or a port group of a relay node, the explicit routing method comprising:

a step of specifying a port or a port group of the egress node by setting an IP address corresponding to the port or the port group of the egress node in a final Subject-object field in Explicit Route Objects in a path message of RSVP protocol (Resource reSerVation

Protocol) extended for setting a label switched path in MPLS protocol (Multi Protocol Label Switching); and

a step of specifying a port or port group of the relay node by setting an IP address corresponding to the port or the port group of the relay node in an intermediate Subject-object field in Explicit Route Objects in the path message of the RSVP protocol.

**10. (Previously Presented):** An explicit routing method in a label switching system, including explicitly specifying, when setting a label switched path (LSP) on the basis of an explicit route specified, a port or a port group of an egress node, and a port or a port group of a relay node, the explicit routing method comprising:

a step of specifying a port or a port group of the egress node and a port or a port group of the relay node by adding an intra-system port number or an intra-system port group number in a Subject-object field in Explicit Route Objects in the path message of RSVP protocol (Resource reSerVation Protocol) extended for setting the label switched path in MPLS protocol (Multi Protocol Label Switching).

**11. (Currently Amended):** An explicit routing method in a label switching system, comprising:

a step of specifying an MPLS (Multi Protocol Label Switching) explicit route by adding, to an MPLS-to-IP forwarding function of a port group in one specified egress node, a communication function with ~~the~~ an MPLS-to-IP forwarding function of a port group in an intra-system other egress node, and a forwarding function to the port group in the intra-system other egress node; and

wherein the one specified egress node and the intra-system other egress node are in a label switching router connected to an MPLS network and a non-MPLS network.

12. (Currently Amended): A packet router in a label switching system, comprising:

a logical router configuring module for logically ~~dividing~~ defining a label switching router (LSR) connected to an MPLS (Multi Protocol Label Switching) network and a non-MPLS network as a plurality of LSRs each having a label switching function and each having a port or a port group; and

a module for specifying only, when setting a label switched path (LSP) on the basis of an explicit route specified, a port or a port group of an egress node that corresponds to the LSR terminating the LSP within one of the plurality of logically ~~divided~~ defined LSRs terminating the LSP;

wherein the LSR's are actually logically defined in a plurality of adapters.

13. (Withdrawn): A packet router in a label switching system, comprising:

a module for flooding, as topology data, a set of an intra-system port and an IP address allocated to the port, or a set of a port group among a plurality of groups into which the ports are divided, and an IP address allocated to the port group; and

a module for managing the topology data flooded from other system and, when setting a label switched path on the basis of an explicit route specified, explicitly specifying a port or a port group of an egress node, and a port or a port group of a relay node on the basis of the received topology data.

**14. (Withdrawn):** A packet router in a label switching system, comprising:

a module for flooding, as topology data, a set of an intra-system port and an IP address allocated to the port, or a set of a port group among a plurality of groups into which the ports are divided, and an IP address allocated to the port group.

**15. (Withdrawn):** A packet router in a label switching system, comprising:

a module for flooding, as topology data, a set of an intra-system port and an IP address allocated to the port, or a set of a port group among a plurality of groups into which the ports are divided, and an IP address allocated to the port group by use of Opaque LSA of OSPF protocol.

**16. (Cancelled)**

**17. (Previously Presented):** A packet router in a label switching system, including explicitly specifying, when setting a label switched path (LSP) on the basis of an explicit route specified, a port or a port group of an egress node, and a port or a port group of a relay node, the packet router comprising:

a module for specifying a port or a port group of the egress node by setting an IP address corresponding to the port or the port group of the egress node in a final ER-HOP-TLV field in ER-TLVs in Label Request Message of CR-LDP (Constraint-Based LSP setup using LDP (Label Distribution Protocol)); and

a module for specifying a port or a port group of the relay node by setting an IP address corresponding to the port or the port group of the relay node in an intermediate ER-HOP-

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TLV field in ER-TLVs in Label Request Message of the CR-LDP.

18. **(Previously Presented):** A packet router in a label switching system, including explicitly specifying, when setting a label switched path (LSP) on the basis of an explicit route specified, a port or a port group of an egress node, and a port or a port group of a relay node, the packet router comprising:

a module for specifying the port or the port group of the egress node and the port or the port group of the relay node by adding an intra-system port number or an intra-system port group number in a ER-HOP-TLV field in ER-TLVs in Label Request Message of CR-LDP (Constraint-Based LSP setup using LDP (Label Distribution Protocol)).

19. **(Previously Presented):** A packet router in a label switching system, including explicitly specifying, when setting a label switched path (LSP) on the basis of an explicit route specified, a port or a port group of an egress node, and a port or a port group of a relay node, the packet router comprising:

a module for explicating a port through which data should pass per system and specifying a port or a port group of the egress node by use of a resource class TLV field with ER-TLV in Label Request Message of CR-LDP (Constraint-Based LSP setup using LDP (Label Distribution Protocol)) being used as ER-HOP-TLV.

20. **(Previously Presented):** A packet router in a label switching system, including explicitly specifying, when setting a label switched path (LSP) on the basis of an explicit route specified, a port or a port group of an egress node, and a port or a port group of a relay node, the

packet router comprising:

a module for specifying a port or a port group of the egress node by setting an IP address corresponding to the port or the port group of the egress node in a final Subject-object field in Explicit Route Objects in a path message of RSVP protocol (Resource reSerVation Protocol) extended for setting a label switched path in MPLS protocol (Multi Protocol Label Switching); and

a module for specifying a port or port group of the relay node by setting an IP address corresponding to the port or the port group of the relay node in an intermediate Subject-object field in Explicit Route Objects in the path message of the RSVP protocol.

**21. (Previously Presented):** A packet router in a label switching system, including explicitly specifying, when setting a label switched path (LSP) on the basis of an explicit route specified, a port or a port group of an egress node, and a port or a port group of a relay node, the packet router comprising:

a module for specifying a port or a port group of the egress node and a port or a port group of the relay node by adding an intra-system port number or an intra-system port group number in an Subject-object field in Explicit Route Objects in the path message of RSVP protocol (Resource reSerVation Protocol) extended for setting the label switched path in MPLS protocol.

**22. (Currently Amended):** A packet router in a label switching system, comprising:

a module for specifying an MPLS (Multi Protocol Label Switching) explicit route by adding, to an MPLS-to-IP forwarding function of a port group in one specified egress node, a



communication function with ~~the~~ an MPLS-to-IP forwarding function of a port group in an intra-system other egress node, and a forwarding function to the port group in the intra-system other egress node; and

wherein the one specified egress node and the intra-system other egress node are in a label switching router connected to an MPLS network and a non-MPLS network.